

REMARKS

By this amendment, claims 36-37 and 40 have been amended. Claim 29 has been canceled. Claims 35-37 and 40-48 are pending in the application. Applicants reserve the right to pursue the original claims and other claims in this and other applications.

Claims 39-40 stand rejected under 35 U.S.C. § 112, fourth paragraph, as being incomplete. Claim 39 has been canceled. Claim 40 has been amended to address the concerns raised in the Office Action. Applicant respectfully requests that the rejection of claim 40 be withdrawn.

Claims 35-36 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Zhao et al. (US 6,339,248). This rejection is respectfully traversed.

Claim 35, as amended, recites a pixel comprising, *inter alia*, "a reset region ... configured to apply a reset charge to said charge collection region in response to a pulsed reset signal applied to said reset region; a pulsed voltage source for providing said pulsed reset signal; and a capacitor, said capacitor having a first terminal in electrical communication with said pulsed voltage source and a second terminal in electrical communication with said reset region" (emphasis added). Zhao et al. does not disclose these limitations. To the contrary, Zhao et al. discloses that "the P+ region in the present invention is not connected to the Pwell or Psub layers, thus making the P+ region floating. This avoids the addition of extra capacitance to the cell." Col. 3, ln. 67 – Col. 4, ln. 3 (emphasis added). Therefore, Zhao et al. teaches away from the use of a capacitor. Applicant respectfully submits that Zhao et al. does not disclose, teach, or suggest a capacitor having a first terminal in electrical communication with the pulsed voltage source and a second terminal in electrical communication with the reset region as recited in claim 35. Since Zhao et al. does not disclose all the limitations of claim 35,

claim 35 and dependent claim 36 are not anticipated by Zhao et al. Applicant respectfully requests that the 35 U.S.C. § 102(e) rejection of claims 35-36 be withdrawn.

Claims 37, 42-43, and 45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhao et al. in view of Chen et al. (US 6,392,263). This rejection is respectfully traversed. In order to establish a *prima facie* case of obviousness "the prior art reference (or references when combined) must teach or suggest all the claim limitations." M.P.E.P. §2142.

Neither Zhao et al. nor Chen et al., even when considered in combination, teach or suggest all limitations of independent claim 42. Claim 42 recites, *inter alia*, a pixel for use in an imaging device comprising "a reset region ...; a source follower transistor ...; a pulsed voltage source for providing said reset signal ...; and a capacitor in electrical communication with said pulsed voltage source, said reset region, and said source follower transistor." As noted in the Office Action, Zhao et al. does not teach or suggest all of these limitations.

Chen et al. is cited as teaching a capacitor in electrical connection with the reset region 123 and the charge collection region for storing charge collected in the collection region. However, Chen et al. teaches that a "capacitor 450 may be added to the photodiode node in order to reduce the charge injection effect of the reset switch." Col. 6, ln. 59-61 (emphasis added). In Chen et al., FIG. 4 shows a capacitor connected to a reset transistor N+ well and to a row select transistor gate. Chen et al. FIG. 4 (reproduced below). Applicant respectfully submits that Chen et al. does not disclose, teach, or suggest a capacitor in electrical communication with the pulsed voltage source, the reset region, and the source follower transistor as recited in claim 42. Thus, Chen et al. does not remedy the deficiency of Zhao et al.

Chen et al. FIG. 4

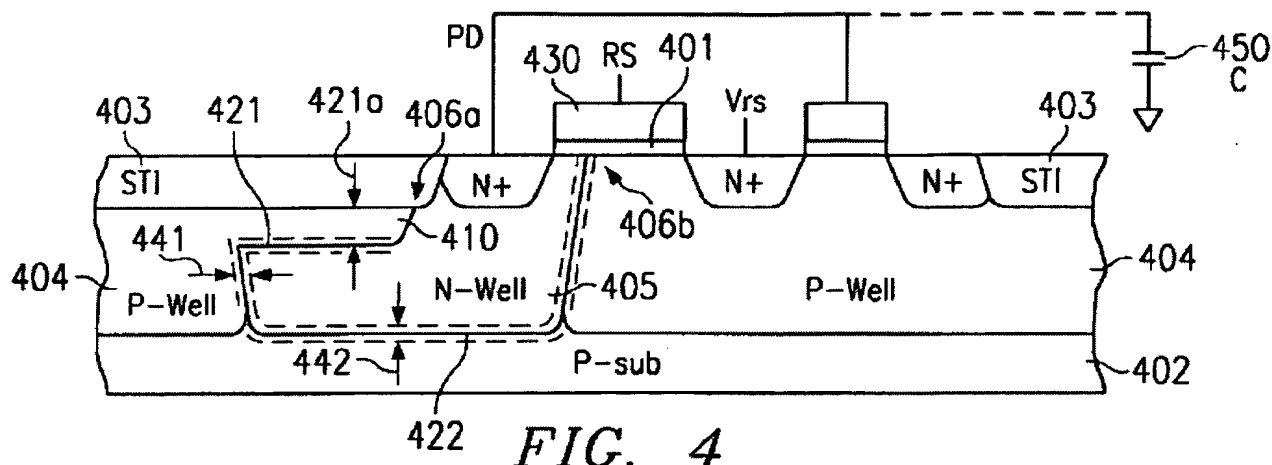


FIG. 4

Nor are Zhao et al. and Chen et al. combinable to reach the claimed invention. M.P.E.P. §2143 delineates the three criteria for establishing a *prima facie* case of obviousness as: 1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; 2) there must be a reasonable expectation of success; and 3) the prior art reference (or references when combined) must teach or suggest all the claim limitations. The Office Action has failed to make a *prima facie* case of obviousness under this M.P.E.P. provision.

Zhao et al. discloses that “the P+ region in the present invention is not connected to the Pwell or Psub layers, thus making the P+ region floating. This avoids the addition of extra capacitance to the cell.” Col. 3, ln. 67 – Col. 4, ln. 3 (emphasis added). Therefore, even if Chen et al. taught a capacitor in electrical communication with the pulsed voltage source, the reset region, and the source follower transistor as recited in claim 42 (which it does not), Zhao et al. teaches away from the use of a capacitor in electrical communication with the pulsed voltage source, the reset region, and the

source follower transistor as recited in claim 42. Neither of the cited references contains a suggestion or a motivation for their combination. Neither of the references sets forth a reasonable expectation of success in their combination. The Office Action does not identify where a suggestion to combine the references exists or why a reasonable expectation of success of combining the references exists. Rather, information contained in the current application is impermissibly used, in hindsight, to pick and choose features of the references to combine to arrive at the present invention.

Since Zhao et al. and Chen et al. do not teach or suggest all of the limitations of claim 42, and there is no motivation to combine the references, the subject matter of claim 42 and dependent claims 43 and 45 would not have been obvious over the cited references. Claim 37 depends from claim 35 and is patentable at least for the reasons mentioned above. Applicant respectfully requests that the 35 U.S.C. § 103(a) rejection of claims 37, 42-43, and 45 be withdrawn.

Claims 41 and 44 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhao et al. in view of Chen et al., and further in view of Dasgupta (US 6,146,939). This rejection is respectfully traversed. Claims 41 and 44 depend from claim 42 and are patentable at least for the reasons mentioned above. Applicant respectfully requests that the 35 U.S.C. § 103(a) rejection of claims 41 and 44 be withdrawn.

Claims 46-48 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhao et al. in view of Chen et al., and further in view of Wada et al. (US 6,677,676). This rejection is respectfully traversed. Claims 46-48 depend from claim 42 and are patentable at least for the reasons mentioned above. Applicant respectfully requests that the 35 U.S.C. § 103(a) rejection of claims 46-48 be withdrawn.

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In view of the above amendment, Applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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